

REMARKS

The above Amendments and these Remarks are in reply to the Final Office Action mailed January 17, 2008. Claims 1-21 were pending in the Application prior to the outstanding Office Action. The Examiner has filed an interview summary for an interview carried out on Thursday September 20, 2007 at 1 PM EST (10:00 AM PST). In the summary, the Examiner stated that “Applicant’s representative and examiner discussed prior art references in regards to claims 1 and 2. No agreement was reached in terms of claim limitations or interpretations of claims 1 and 2.” Examiner interview summary, filed October 3, 2007.

In contrast, Applicants filed a summary that indicated that “[d]uring the interview the Applicants pointed out that in *Jun*, space was not filled in between the germs. The Examiners indicated that they considered that the germs were abutting leaving ‘little space’ between the germs. Applicants point out that in Fig. 11 (element Fsk) of *Jun*, there is vertical space between the key regions, but there is also significant horizontal space on the left and right of the canvas caused by the uneven widths of the key regions. In general, there will be empty space both horizontally and vertically (e.g. *Jun* Fig. 12B (element Fsk); Fig.13A (element Fsk)). This occurs because rectangular key regions of different sizes generally will not pack the rectangular canvas perfectly without gaps. Applicants point out that ‘little space’ is still ‘space’ and as such *Jun* does not teach filling this space. Applicants also stated that “[d]uring the interview, even the Examiners admitted that in *Jun* there was no space or that it was filled with the germ”. Applicants’ reply to Office action, filed November 8, 2007. In the final Office Action, the Examiner states “Furthermore, the applicant argues that the Examiners admitted that in *Jun* there

was no space or that it was filled with the germ, which is not accurate since in the interview summary and through further examination, the statement was not agreed upon and also stand untrue through further examination". Final Office Action mailed January 17, 2008, p. 12 lines 1-4. Applicants respectfully point out that the Examiner's interview summary "discussed prior art references with regards to claims 1 and 2", and does not indicate any substantive disagreement with Applicants' statement.

The Examiner is reminded of his statutory responsibility "... to provide a complete application file history and to enhance the clarity of the prosecution history record, an examiner must provide clear explanations of all actions taken by the examiner during prosecution of an application". MPEP 707.07(f). The interview summary that the Examiner has furnished contains few substantive facts and those facts outlined would apply to any application. If the Examiner does not agree with the Applicants' substantive description of what was discussed and agreed upon the Examiner is herein requested to make a substantive summary of what the Examiner believes was discussed during the interview of September 20, 2007 to complete the prosecution history record. The Applicants also request that Examiner Brian Werner separately write a summary of the interview.

Claims 1, 10 and 20 are amended. The amendments to Claims 1, 10 and 20 are supported in the specification as filed at least at paragraph [0007]. Claims 1-21 remain for the Examiner's consideration. Reconsideration and withdrawal of the rejections are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112

Claim 20 is rejected under 35 U.S.C. §112 second paragraph as allegedly being indefinite.

Amended Claim 20 includes the limitation suggested by the Examiner ‘region of interest’. The Examiner is thanked for this suggestion.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Claims 1, 10 and 12 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Jun et al., U.S. Publication No. US 2001/0020981 (hereinafter *Jun*).

Amended Claims 1 and 10 include the limitation ‘filling in the space of the canvas between the germs’. The Examiner directs the Applicants to Figures 13A, 13B and 17. However, inspection of Figures 13A, 13B and 17 reveals the space between the germs is not filled. Further, nowhere in *Jun* is there any discussion of filling in space between the germs. A word search of *Jun* indicates the word ‘space’ does not occur, while the word ‘background’ only appears in the title ‘background to the invention’. While *Jun* arranges the content within the canvas it does not explicitly or implicitly disclose filling in the space between the germs in the canvas.

The Examiner argues that “[t]he claim limitation “filling in the space of the canvas with one or more parts of the image from the support”, does not bring in the limitation of occupying every bit of space of the canvas. Final Office Action mailed January 17, 2008, p 11, last paragraph, lines 5-7. Applicants respectfully disagree. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described ...The identical invention must be shown in as

complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) MPEP 2131. Since *Jun* does not disclose 'filling in the space between the germs', it does not disclose all limitations of Claims 1 and 10. Accordingly, Claims 1 and 10 are not anticipated by *Jun*.

Claims 12 directly depends from independent Claim 10, and is therefore believed patentable for at least the same reasons as independent Claim 10 and because of the additional limitations of this claim.

In view of the above, Applicants respectfully request that the Examiner reconsider and withdraw the 102(b) rejections.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 2-6, 13-15 and 20 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Jun*, in view of Uchihashi et al., ACM Multimedia: "Video Manga: Generating Semantically Meaningful Video Summaries" (hereinafter *Uchihashi*).

Claims 1 and 10 have the limitations "filling in the space of the canvas between the germs". The Examiner states "... it can clearly be seen in figure 13a and paragraphs 0074 and 0075 that the synthetic frame FSK presents an image by combining key frames or key regions representing the entire content of the scene". Final Office Action mailed January 17, 2008, p 11, last paragraph, lines 3-5. In fact figure 13a shows blank spaces between the germs (middle and bottom right of Fsk figure) and paragraph [0074] of *Jun* states "FIG. 13A illustrates a synthetic key frame Fsk generated from one scene constructed of nine shots whose running time is sixty-five seconds, and FIG. 13B

illustrates a synthetic key frame Fsk generated from one scene constructed of nine shots whose running time is fifty-three seconds". Paragraph [0075] of *Jun* states "[t]hough the shots included in one scene have different contents, the synthetic key frame Fsk according to the present invention can present an image combining key frames or key regions representing the entire contents of the scene without selecting a key frame representing a scene. Therefore, the synthetic key frame Fsk can summarize the entire contents of the scene". Nowhere in *Jun* is there any discussion of filling in space between the germs. The Examiner argues that "[t]he claim limitation "filling in the space of the canvas with one or more parts of the image from the support", does not bring in the limitation of occupying every bit of space of the canvas. Final Office Action mailed January 17, 2008, p 11, last paragraph, lines 5-7. However, *Jun* neither explicitly nor implicitly teaches or suggests filling in any of the space between the germs. A word search of *Jun* indicates the word 'space' does not occur, while the word 'background' only appears in the title 'background to the invention'. Since neither *Jun* nor *Uchihashi* teach or suggest filling in the space of the canvas between the germs, they do not teach or suggest all limitations of Claims 1 and 10. MPEP 2143.03. As such, Claims 1 and 10 were not obvious at the time the invention was made.

Claim 2 includes the limitation "determining a group within each of the plurality of video segments having the largest 3-D volume". The Examiner states that "Uchihashi teaches determining a group within each of the plurality of video segments having the largest 3D-volume (Uchihashi: section 4.2, length of segment is scored)". Final Office Action mailed January 17, 2008, p 5 lines 7-8. The Applicants have defined '3-D volume' in the specification as filed. "Applicants need not confine themselves to the

terminology used in the prior art, but are required to make clear and precise the terms that are used to define the invention whereby the metes and bounds of the claimed invention can be ascertained". MPEP 2173.05(a). The Examiner is directed to the sentences "[a] video can be regarded as a three dimensional volume in x-y-t space" and "[a] region may be characterized as a subset three dimensional region within the x-y-z space of the three dimensional video segment 410" in paragraph [0032] and elsewhere in the specification for the definition of '3-D volume'. *Uchihashi* actually uses a one dimensional volume, as the video is represented as a sequence of feature sets, one for each video frame. The feature set can come from the image features of the video frame, e.g. color. This representation is designed for efficient computation and memory usage. Since, *Uchihashi* '1-D volume' is not '3-D volume', *Uchihashi* does not teach or suggest all limitations of amended Claim 2.

Further, *Uchihashi* does not project the dominant group onto the key frame. He scales the key frames to different sizes based on their importance score, the 'full' key frame is always used. There is no notion of a dominant group or projections involved in his method. Since, *Uchihashi* does not teach or suggest "determining a group within each of the plurality of video segments" he does not teach or suggest all limitations of amended Claim 2.

Claims 2-6, 13-15 and 20 all directly or indirectly depend from independent Claims 1 and 10, and are therefore believed patentable for at least the same reasons as independent Claims 1 and 10 and because of the additional limitations of these claims.

Claims 7-9 and 16-18 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Jun*, in view of *Li* et al. U.S. Publication No. US 2006/0023786 (hereinafter *Li*).

Claims 1 and 10 have the limitations “filling in the space of the canvas between the germs”. Since neither *Jun* nor *Li* teach or suggest filling in the space of the canvas, they do not teach or suggest all limitations of Claims 1 and 10. As such, Claims 1 and 10 were not obvious at the time the invention was made.

Claim 7 includes the limitation “assigning a pixel value of each point in the canvas to the same pixel value in the support associated with the germ closest to each point”. The Examiner asserts that *Li* teaches assigning a pixel value of each point in the canvas to the same pixel value in the support associated with the germ closest to each point”. Page 8 3rd paragraph, 1st sentence. Applicants respectfully disagree with the Examiner’s interpretation of *Li*. What *Li* actually does as detailed in [0144] is explained earlier in [0140]: “...a pixel in the panoramic background is constructed from substantially the median of the pixels from all frames of a video sequence that are mapped to the same pixel position ...”. *Li*, paragraph [0140], fourth sentence. Thus the pixel is constructed from a median of pixels over multiple frames, it does not come from the support of a single key frame. Since neither *Jun* nor *Li* teach or suggest “assigning a pixel value of each point in the canvas to the same pixel value in the support associated with the germ closest to each point”, they do not teach or suggest all limitations of Claim 7. As such, Claim 7 was not obvious at the time the invention was made.

Claim 8 includes the limitation “wherein if the germ closest to the point does not have a support that includes the point, the point is assigned the pixel value of the closest

germ with a support that includes the point". The Examiner argues that this limitation is taught at paragraph [0052]. Applicants respectfully disagree. Because *Li* constructs the pixel from a median of pixels over multiple frames, the method does not allow the point to be assigned to a single "pixel value of the closest germ with a support that includes the point". Since neither *Jun* nor *Li* teach or suggest "assigning the pixel value of the closest germ with a support that includes the point", they do not teach or suggest all limitations of Claim 8. As such, Claim 8 was not obvious at the time the invention was made.

Claim 9 includes the limitation "wherein the point is assigned a background value if no support includes the point". The Examiner argues that this limitation is taught at paragraphs [0052] and [0144]. Applicants respectfully disagree. Because *Li* constructs the pixel from a median of pixels over multiple frames, the method does not allow the point to be assigned to a single "background value". Since neither *Jun* nor *Li* teach or suggest "assigning the pixel to a background value", they do not teach or suggest all limitations of Claim 9. As such, Claim 9 was not obvious at the time the invention was made.

Claims 7-9 and 16-18 all directly or indirectly depend from independent Claims 1 and 10, and are therefore believed patentable for at least the same reasons as independent Claims 1 and 10 and because of the additional limitations of these claims.

Claims 11 and 19 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Jun*, in view of *Li* et al., U.S. Patent No. US 7,035,435 (hereinafter *Li2*).

Claims 1 and 10 include the limitation “filling in the space of the canvas between the germs”. Since neither *Jun* nor *Li2* teach or suggest filling in the space of the canvas between the germs, they do not teach or suggest all limitations of Claims 1 and 10. As such, Claims 1 and 10 were not obvious at the time the invention was made.

Claims 11 and 19 directly depend from independent Claims 10 and 19, and are therefore believed patentable for at least the same reasons as independent Claims 1 and 10 and because of the additional limitations of these claims.

Claim 21 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Jun*, in view of *Lin*, U.S. Patent No. US 6,307,964 (hereinafter *Lin*).

Claim 1 includes the limitation “filling in the space of the canvas between the germs”. Since neither *Jun* nor *Lin* teach or suggest filling in the space of the canvas between the germs, they do not teach or suggest all limitations of Claim 1. As such, Claim 1 was not obvious at the time the invention was made.

Claim 21 includes the limitation “using a Voronoi algorithm to determine the shape of the support to be placed on the canvas”. The Examiner argues that *Lin* teaches this limitation. Applicants respectfully disagree. In fact *Lin* teaches a “Voronoi Ordering function”, which is a function for ordering a set of points with respect to a closed contour.

Column 4, lines 15-42. In particular, that contour is part of the input. In contrast, the Applicants’ Voronoi algorithm computes the boundary curves between the germs, so the contours are part of the ‘output’. The purpose of our Voronoi algorithm is to fill in the space between the germs, with respect to a plurality of output shapes. In contrast, *Lin* computes a “shape descriptor”, or an abstraction of a single input shape. Georgy Voronoi made significant contributions to mathematics and geometry. His name is attached to

many algorithms, functions and operations. However, the ‘Voronoi algorithm’ and the ‘Voronoi Ordering function’ are not the same. Since neither *Jun* nor *Lin* teach or suggest “using a Voronoi algorithm to determine the shape of the support to be placed on the canvas”, they do not teach or suggest all limitations of Claim 21. As such, Claim 21 was not obvious at the time the invention was made.

Claim 21 directly depends from independent Claim 1, and is therefore believed patentable for at least the same reasons as independent Claim 1.

In view of the above, Applicants respectfully request that the Examiner reconsider and withdraw the 103(a) rejections.

CONCLUSION

In light of the above, it is respectfully requested that all outstanding rejections be reconsidered and withdrawn. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge the required fees and any underpayment of fees or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this reply, including any fee for extension of time, which may be required.

Respectfully submitted,

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